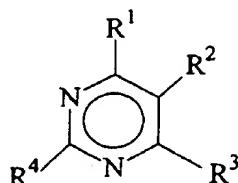


Subno Patent claims

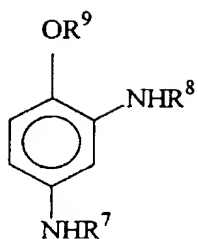
1. An agent for dyeing keratin fibers, comprising
 A) at least one pyrimidine derivative of the
 5 general formula I



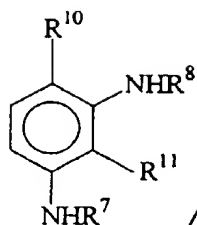
(I)

- 10 in which R^1 , R^2 , R^3 and R^4 may be identical or
 different and are hydrogen, OH, NH_2
 or a group NR^5R^6 , in which R^5 and R^6
 may be identical or different and are
 15 C_1 - C_4 -alkyl, C_1 - C_4 -hydroxyalkyl having
 a primary and/or secondary hydroxyl
 group,
 where two of the radicals R^1 , R^2 , R^3
 or R^4 together can form an optionally
 substituted 5- and 6-membered
 20 heterocycle containing one or two
 nitrogen and/or oxygen atom(s) in the
 molecule,
 with the proviso that at least two of
 the radicals R^1 , R^2 , R^3 or R^4 are a
 group NH_2 and/or NR^5R^6 ,
 25 B) at least one compound chosen from the group
 consisting of
 (a) m-phenylene derivatives of the
 formulae II and III

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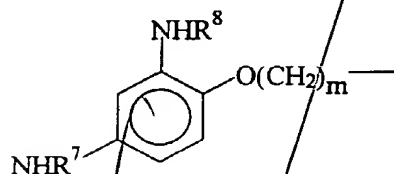


(II)



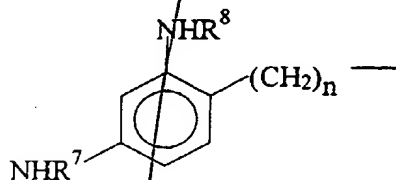
(III)

in which R^7 and R^8 may be identical or different and are hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl, R^9 is C_1 - C_4 -hydroxyalkyl or a radical of the general formula IV



(IV)

in which R^7 and R^8 are as defined above and m is an integer from 1 to 4, R^{10} is hydrogen or a radical of the general formula V

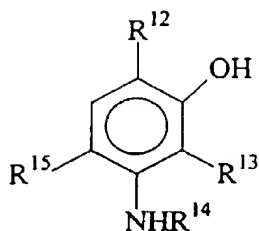


(V)

in which R^7 and R^8 are as defined above and n is an integer from 1 to 4, R^{11} is hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl,

(b) m-aminophenol derivatives

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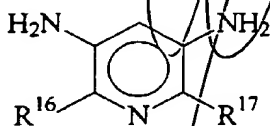


(VI)

in which R^{12} is hydrogen or C_1 - C_4 -alkyl,
 R^{13} is hydrogen, fluorine, chlorine,
 OCH_3 or C_1 - C_4 -alkyl,
 R^{14} is hydrogen, C_1 - C_4 -alkyl, C_1 - C_4 -
hydroxyalkyl or OCF_3 ,
 R^{15} is hydrogen, fluorine, chlorine or
 OCH_3 ,

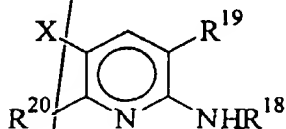
with the provisos that R^{12} , R^{13} , R^{14} and R^{15} are
not hydrogen at the same time and that, if R^{12}
is methyl, R^{13} , R^{14} and R^{15} are not hydrogen at
the same time,

(c) pyridine derivatives of the formulae VII
and VIII



(VII)

in which R^{16} and R^{17} may be identical or
different and are fluorine, chlorine
or $-OCH_3$,



(VIII)

in which R^{18} is hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -
hydroxyalkyl,

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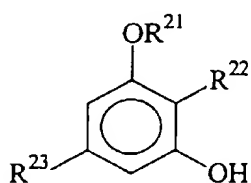
R^{19} is OH or NH_2 ,

R^{20} is hydrogen, C_1 - C_4 -alkoxy or NH_2 ,

X is hydrogen or OCH_3 ,

with the provisos that, if R^{19} is NH_2 , R^{18} and R^{20} are not C_1 - C_4 -alkyl or methoxy respectively at the same time, and if R^{18} is hydrogen, R^{19} and R^{20} are not OH or hydrogen respectively at the same time,

(d) resorcinol derivatives of the formula IX

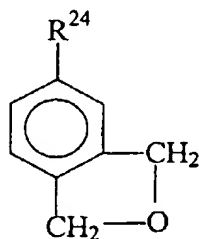


(IX)

in which R^{21} , R^{22} and R^{23} may be identical or different and are hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl,

with the provisos that R^{21} , R^{22} and R^{23} are not hydrogen at the same time, if R^{21} and R^{23} are hydrogen, R^{22} is not methyl, and if R^{21} is methyl, R^{22} and R^{23} are not hydrogen at the same time,

(e) methylenedioxybenzene derivatives of the formula X



(X)

in which R^{24} is OH, NH_2 or NHR^{25} , in which R^{25} is C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl, and

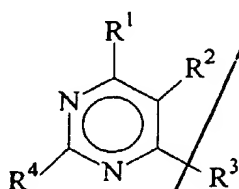
(f) 3,4-diaminobenzoic acid.

2. The agent as claimed in claim 1, characterized in that 4-hydroxy-2,5,6-triaminopyrimidine, 2-hydroxy-2,5,6-triaminopyrimidine, 2,4,5,6-tetraaminopyrimidine, 5,6-diamino-2,4-dihydroxypyrimidine, 2,4-diamino-5,6-dihydroxypyrimidine, 4-dimethylamino-2,5,6-tetraminopyrimidine and any mixtures thereof are present as pyrimidine derivatives of the formula I.
3. The agent as claimed in claim 1 or 2, characterized in that the pyrimidine derivatives of the formula I are present in an amount of from 0.03 to 65 mmol, in particular from 1 to 40 mmol, based on 100 g of the total dyeing agent.
4. The agent as claimed in any of claims 1 to 3, characterized in that the compounds of component B are chosen from the group 1,3-bis(2,4-diaminophenoxypropane), 1,3-bis(2,4-diaminophenylpropane), 2,4-diaminophenoxyethanol, 2,6-bis(2'-hydroxyethylamino)toluene, 3-amino-2-chloro-6-methylphenyl, 5-amino-4-chloro-2-methylphenol, 2,4-dichloro-3-aminophenol, 3,5-diamino-2,6-dimethoxypyridine, 5-methylresorcinol, 2,5-dimethylresorcinol, 3,4-methylenedioxyphenol, 3,4-methylenedioxyaniline, N-(2-hydroxyethyl)-3,4-methylenedioxyaniline and any mixtures thereof.
5. The agent as claimed in any of claims 1 to 4, characterized in that the compounds of component B are present in an amount of, in each case, from 0.03 to 65 mmol, in particular from 1 to 40 mmol, in each case based on 100 g of the total dyeing agent.
6. The agent as claimed in any of claims 1 to 5, characterized in that at least one activated

carbonyl compound chosen from the group consisting of isatin, 5-chloroisatin, 5-bromoisatin, 6-bromoisatin, 5-nitroisatin, N-hydroxymethylisatin, N-allylisatin, 5-isatinsulfonic acid Na salt, glutacanaldehyde tetrabutylammonium salt, tribase aldehyde, malonaldehyde bis(dimethyl acetal), 4-hydroxy-3-methoxycinnanaldehyde, 1-piperidino-methylisatin, 1-diethylaminomethylisatin, glutacanaldehyde Na salt, 5-N-methylanilinopentadienyl, 2-chloro-3-hydroxymethylene-1-cyclohexene 1-aldehyde, N-(5-anilino-2,4-pentanedien-1-ylidene)anilinium chloride, trans- β -(2-furyl)-acrolein, 2-nitro-1,3-indanedione, dehydroascorbic acid, 2-acetyl-1,3-cyclohexanedione, 7-dimethylamino-2,4,6-heptatrienylydene dimethylammonium perchlorate and 4-formyl-1-methylpyridinium benzenesulfonate.

7. The agent as claimed in any of claims 1 to 6, characterized in that one or more compounds chosen from 5,6-dihydroxyindole and its N-substituted C₁-C₄-alkyl and C₁-C₄-hydroxyalkyl derivatives, 5,6-dihydroxyindoline and its N-substituted C₁-C₄-alkyl and C₁-C₄-hydroxyalkyl derivatives and the compounds known as developers, chosen from the group consisting of p-phenylenediamine, p-tolylenediamine, p-aminophenol, 4,4'-diaminodiphenylamine, 1,10-bis(2,5-diaminophenyl)-1,4,7,10-tetraoxydecane, 2-(2'-hydroxyethyl)-p-phenylenediamine, 2,6-dichloro-4-aminophenol, N,N-bis(2'-hydroxyethyl)-p-phenylenediamine, 3-methyl-4-aminophenol, 2-aminomethyl-4-aminophenol, 5-aminosalicylic acid, bis(2-hydroxy-5-aminophenyl)methane, 2-(2,5-diaminophenoxy)ethanol are also added.

8. The agent as claimed in any of claims 1 to 7, characterized in that it comprises anionic, zwitterionic or nonionic surfactants.
- 5 9. The agent as claimed in any of claims 1 to 8, characterized in that it is an air-oxidizable dyeing system.
- 10 10. The agent as claimed in any of claims 1 to 8, characterized in that [lacuna] comprises oxidizing agents chosen from the group H_2O_2 , peroxydisulfate and percarbonate.
- 15 11. The agent as claimed in any of claims 1 to 8, characterized in that it is an enzymatic dyeing system.
- 20 12. The use of a combination of
A) at least one pyrimidine derivative of the general formula I



(I)

25 in which R^1 , R^2 , R^3 and R^4 may be identical or different and are hydrogen, OH, NH_2 or a group NR^5R^6 , in which R^5 and R^6 may be identical or different and are C_1 - C_4 -alkyl, C_1 - C_4 -hydroxyalkyl having a primary and/or secondary hydroxyl group,

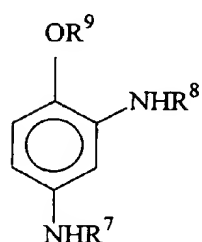
30 where two of the radicals R^1 , R^2 , R^3 or R^4 together can form an optionally substituted 5- and 6-membered heterocycle containing one or two

nitrogen and/or oxygen atom(s) in the molecule,

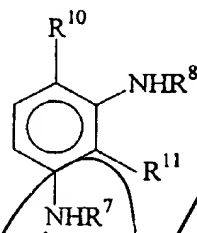
with the proviso that at least two of the radicals R^1 , R^2 , R^3 or R^4 are a group NH_2 and/or NR^5R^6 ,

B) at least one compound chosen from the group consisting of

(a) m-phenylene derivatives of the formulae II and III



(II)

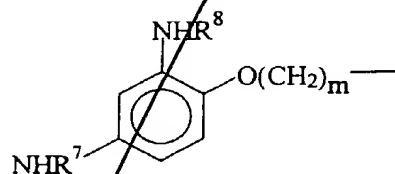


(III)

(II)

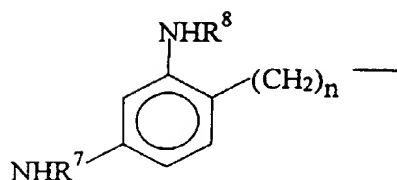
(III)

in which R^7 and R^8 may be identical or different and are hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl, R^9 is C_1 - C_4 -hydroxyalkyl or a radical of the general formula IV



(IV)

in which R^7 and R^8 are as defined above and m is an integer from 1 to 4, R^{10} is hydrogen or a radical of the general formula V

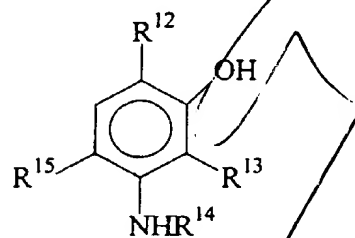


(V)

in which R^7 and R^8 are as defined above and n is an integer from 1 to 4,

R^{11} is hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl,

(b) m-aminophenol derivatives



(VI)

in which R^{12} is hydrogen or C_1 - C_4 -alkyl,

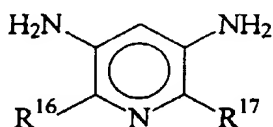
R^{13} is hydrogen, fluorine, chlorine, OCH_3 or C_1 - C_4 -alkyl,

R^{14} is hydrogen, C_1 - C_4 -alkyl, C_1 - C_4 -hydroxyalkyl or OCF_3 ,

R^{15} is hydrogen, fluorine, chlorine or OCH_3 ,

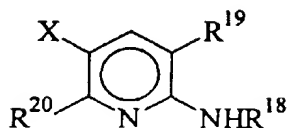
with the provisos that R^{12} , R^{13} , R^{14} and R^{15} are not hydrogen at the same time and that, if R^{12} is methyl, R^{13} , R^{14} and R^{15} are not hydrogen at the same time,

(c) pyridine derivatives of the formulae VII and VIII



(VII)

in which R^{16} and R^{17} may be identical or different and are fluorine, chlorine or OCH_3 ,



(VIII)

in which R^{18} is hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl,

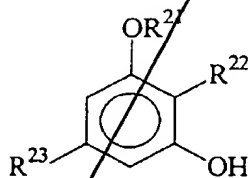
R^{19} is OH or NH_2 ,

R^{20} is hydrogen, C_1 - C_4 -alkoxy or NH_2 ,

X is hydrogen or OCH_3 ,

with the provisos that, if R^{19} is NH_2 , R^{18} and R^{20} are not C_1 - C_4 -alkyl or methoxy respectively at the same time, and if R^{18} is hydrogen, R^{19} and R^{20} are not OH or hydrogen respectively at the same time,

(d) resorcinol derivatives of the formula IX

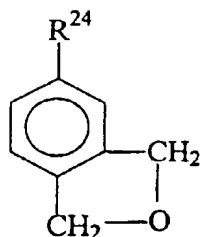


(IX)

in which R^{21} , R^{22} and R^{23} may be identical or different and are hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl,

with the provisos that R^{21} , R^{22} and R^{23} are not hydrogen at the same time, if R^{21} and R^{23} are hydrogen, R^{22} is not methyl, and if R^{21} is methyl, R^{22} and R^{23} are not hydrogen at the same time,

- (e) methylenedioxybenzene derivatives of the formula X

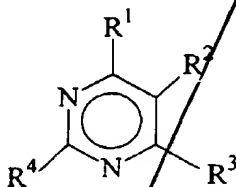


(X)

in which R^{24} is OH, NH_2 or NHR^{25} , in which R^{25} is C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl, and

- (f) 3,4-diaminobenzoic acid, for dyeing keratin fibers.

13. A method of dyeing keratin fibers, in particular human hair, in which a dyeing agent comprising A) at least one pyrimidine derivative of the general formula I



(I)

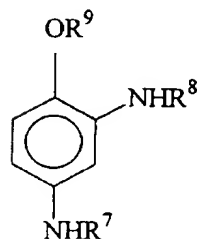
in which R^1 , R^2 , R^3 and R^4 may be identical or different and are hydrogen, OH, NH_2 or a group NR^5R^6 , in which R^5 and R^6 may be identical or different and are C_1 - C_4 -alkyl, C_1 - C_4 -hydroxyalkyl having a primary and/or secondary hydroxyl group, where two of the radicals R^1 , R^2 , R^3 or R^4 together can form an optionally substituted 5- and 6-membered

heterocycle containing one or two nitrogen and/or oxygen atom(s) in the molecule,

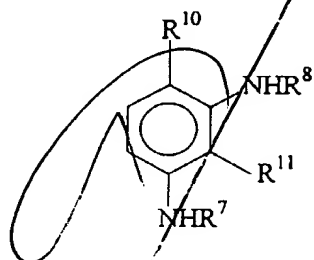
with the proviso that at least two of the radicals R^1 , R^2 , R^3 or R^4 are a group NH_2 and/or NR^5R^6 ,

B) at least one compound chosen from the group consisting of

(a) m-phenylene derivatives of the formulae II and III



(II)

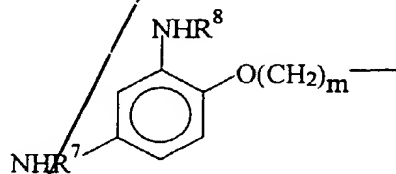


(III)

in which

R^7 and R^8 may be identical or different and are hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl,

R^9 is C_1 - C_4 -hydroxyalkyl or a radical of the general formula IV

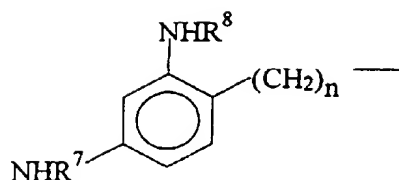


(IV)

in which

R^7 and R^8 are as defined above and m is an integer from 1 to 4,

R^{10} is hydrogen or a radical of the general formula V



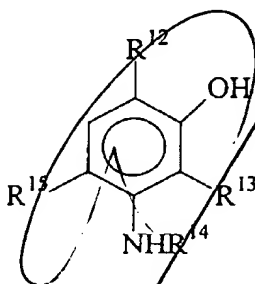
(V)

in which

R⁷ and R⁸ are as defined above and n is an integer from 1 to 4,

R¹¹ is hydrogen, C₁-C₄-alkyl or C₁-C₄-hydroxyalkyl,

(b) m-aminophenol derivatives



(VI)

in which

R¹² is hydrogen or C₁-C₄-alkyl,

R¹³ is hydrogen, fluorine, chlorine, OCH₃ or C₁-C₄-alkyl,

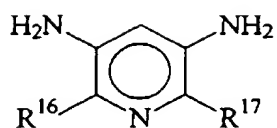
R¹⁴ is hydrogen, C₁-C₄-alkyl, C₁-C₄-hydroxyalkyl or OCF₃,

R¹⁵ is hydrogen, fluorine, chlorine or OCH₃,

with the provisos that R¹², R¹³, R¹⁴ and R¹⁵ are not hydrogen at the same time and that, if R¹² is methyl, R¹³, R¹⁴ and R¹⁵ are not hydrogen at the same time,

(c) pyridine derivatives of the formulae VII and VIII

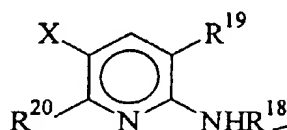
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(VII)

in which

R^{16} and R^{17} may be identical or different and are fluorine, chlorine or $-OCH_3$,



(VIII)

in which R^{18} is hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl,

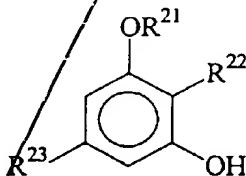
R^{19} is OH or NH_2 ,

R^{20} is hydrogen, C_1 - C_4 -alkoxy or NH_2 ,

X is hydrogen or OCH_3 ,

with the provisos that, if R^{19} is NH_2 , R^{18} and R^{20} are not C_1 - C_4 -alkyl or methoxy respectively at the same time, and if R^{18} is hydrogen, R^{19} and R^{20} are not OH or hydrogen respectively at the same time,

(d) resorcinol derivatives of the formula IX



(IX)

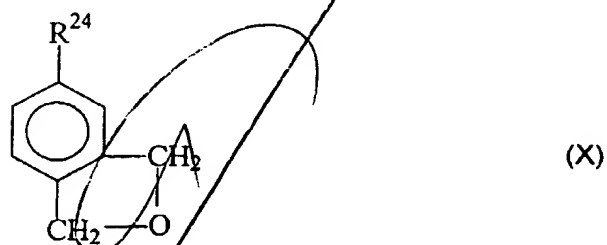
in which

R^{21} , R^{22} and R^{23} may be identical or different and are hydrogen, C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl,

with the provisos that R^{21} , R^{22} and R^{23} are not hydrogen at the same time, if R^{21} and R^{23} are

hydrogen, R^{22} is not methyl, and if R^{21} is methyl, R^{22} and R^{23} are not hydrogen at the same time,

(e) methylenedioxybenzene derivatives of the formula X



in which

R^{24} is OH, NH_2 or NHR^{25} , in which R^{25} is C_1 - C_4 -alkyl or C_1 - C_4 -hydroxyalkyl, and

(f) 3,4-diaminobenzoic acid,

and customary cosmetic ingredients, is applied to the keratin fibers, left on the fibers for a while, usually about 30 minutes, and then rinsed out again or washed out using a shampoo.

Abb
B2